ABSTRACT OF THE DISCLOSURE

A receiver is provided, in which the receiver includes K signal extraction parts, a signal estimation part, K joint probability calculation parts and a multiplying part, wherein: an ith $(1 \leqq i \leqq K)$ signal extraction part extracts ith to Kth user signals; an ith joint probability calculation part calculates a joint probability density function that any signal set in the ith to Kth user signals will be obtained if ith to Kth user signals estimated by the signal estimation part are assumed to be received; the multiplying part multiplies probability density functions calculated by the joint probability calculation parts; and the signal estimation part estimates first to Kth user signals which maximize the multiplied value, and outputs the first to Kth user signals.